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FARM TRACTORS: TYPE, SIZE, AGE, AND LIFE

By
A. P. Brodell, Agricultural Economist, and
R. A. Pike, Junior Agricultural Economist

Washington, D.C.
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SOURCE OF MATERIAL

Crop correspondents in February 1941 supplied information relative to the age, type, rubber-tired equipment, fuel consumed, and work performed by their tractors. They estimated the number of tractors of different type on farms in their locality, the extent of use of rubber tires on general-purpose and standard-wheel tractors; the percentage of farmers owning combines, grain binders, mowers, and manure spreaders; and the proportion of these machines that were equipped with rubber tires. Usable returns were received from more than 25,000 crop correspondents who reported on machines for their locality and on more than 17,000 tractors on their own farms. The reports provided complete information as to age and type of tractor and extent of use of rubber tires for more than 13,000 tractors.

This report summarizes the information collected on the type, size, age, and life of farm tractors. Other findings of the study are summarized in the reports "Rubber-Tired Equipment of Principal Farm Machines" and "Fuel Consumed and Work Performed by Farm Tractors."

The material was analyzed in the Bureau of Agricultural Economics. David O. Thomas, L. G. Shestock, Caroline G. Towles, Edith E. Snow, Cora L. Whitmer, Dorothy R. Owen, and other members of the staff assisted in the computations.

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Agriculture is now one of our most vital war-production industries. The tools with which it is equipped for the record-breaking task in which it is engaged concern everyone.

From the standpoint of farm power, the farm plant is especially well equipped. Numbers of farm tractors, farm automobiles, and farm motortrucks at the beginning of World War II were at record levels. The same was true for such labor-saving machines as combines, corn pickers, and multiple-row cultivators. Production per farm worker in recent years has been substantially greater than in World War I. With many workers leaving the farms for military service and for industrial employment, further increases in production per worker can be expected.

TRACTOR NUMBERS HAVE BEEN INCREASING

Before World War I, there were but few tractors on farms in this country or elsewhere. Farmers' purchases of tractors began to assume importance in the World War period and in 1919 and in 1920 farmers bought more than 100,000 tractors (table 1).

Expansion in sales of tractors was at first due mainly to the acute shortages of farm labor and to the relatively favorable farm income. Following the marked decline in prices of farm products in 1920, purchases of tractors declined materially. The widespread use of relatively small and low-priced standard-wheel tractors brought recovery in tractor purchases following 1921.

Table 1. - Tractors: Estimated number on farms and annual purchase by farmers, 1910-41 [1]

Year	Tractors purchased by farmers	Tractors on farms January 1
	Thousands	Thousands
1910	3	1
1911	4	4
1912	7	8
1913	5	14
1914	11	17
1915	16	25
1916	19	37
1917	41	51
1918	84	85
1919	109	158
1920	140	246
1921	65	343
1922	95	372
1923	108	428
1924	91	496
1925	113	549
1926	113	621
1927	133	693
1928	82	782
1929	137	827
1930	116	920
1931	58	997
1932	25	1,022
1933	25	1,019
1934	65	1,016
1935	122	1,048
1936	165	1,125
1937	221	1,230
1938	151	1,370
1939	159	1,447
1940	218	1,545
1941	[2] 255	[2] 1,665
1942		[2] 1,800

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[1] Tractor purchases 1910-39 and tractor numbers 1910-34 estimated from BAE processed report, "Income Parity for Agriculture, Part II, Section 3, October, 1940." Purchases 1939 and 1940 estimated from reports of the Census of Manufacturers, U. S. Department of Commerce.

Tractor numbers 1935-41, based on estimated annual purchases and annual discards of tractors by farmers adjusted to tractor number reported by the Bureau of the Census, April 1940.

[2] Preliminary.

Increasing attention was given to the development of the general-purpose tractor around 1925, but it was not until the late twenties that farmers began buying significant numbers of this type of tractor. Farmers bought more than 100,000 tractors of all types each year from 1925 to 1930, except in 1928.

Purchases of tractors declined sharply in 1931, and in 1932 and 1933 they were lower than for any year since 1916. Recovery in tractor purchases in the middle and late Thirties was brought about by such factors as improved buying power of farmers, the drought of 1934 and 1936 with resulting relatively high prices for feed, the introduction of the one-plow tractor, the adoption of rubber tires for tractors, and the rather heavy losses of workstock from sleeping sickness in some sections. The large number bought in 1940 and the record purchase of 1941 were chiefly the result of further recovery in farm buying power, but the decreased supply of farm labor and prospective shortages of farm tractors, as a result of the defense program, contributed to the increase in 1941.

OTHER PHASES OF MECHANIZATION

The increase in use of tractors which has taken place during the last 30 years is only a part of the expansion in the use of machine power on farms in the United States. In 1910, the 19.4 million head of work animals on farms supplied the power for practically all drawbar work on farms and furnished the power for hauling farm products to market and needed supplies to the farm. Animal-drawn vehicles were also used principally for transportation by farmers and their families. Thus, while the use of tractor power was increasing on the farm, automobiles and motortrucks were displacing farm animals to a much greater extent on the highways.

With the greatly increased use of machine power, numbers of work animals on farms have declined about 30 percent since 1910 (table 2). In recent years, the annual decline of workstock has amounted to about 300,000 head. Although the annual crop of colts is now larger than some years earlier, it is still too small to maintain workstock on farms at present numbers, and further decreases in number of workstock are expected in the years ahead.

Table 2. - Number workstock, tractors, motortrucks, and automobiles on farms, in the United States, designated years

Year	Number of farms 1/	Horses and mules 2 years old and over on farms Jan. 1	Tractors on farms Jan. 1	Motortrucks on farms Jan. 1	Automobiles on farms Jan. 1
	Thousands	Thousands	Thousands	Thousands	Thousands
1910	6,362	19,429	1	-	50
1920	6,448	22,386	246	139	2,146
1930	6,289	17,981	920	900	4,135
1940	6,097	13,365	1,545	1,047	4,144

1/ Compiled from reports of the Bureau of the Census.

TRACTOR USE VARIES IN DIFFERENT AREAS

Adoption of the farm tractor has not been uniform in all parts of the country. In 1920, the use of tractors was more pronounced in the Great Plains than elsewhere (table 3). This situation still continues. In 1940, there were more than 40 tractors per 100 farms in the Corn Belt and the Lake States but there were more than 60 in the Great Plains. Tractor numbers in relation to number of farms were above the national average in the Pacific, the Mountain, and the North Atlantic States. Farms where tractors are extensively used are usually of fairly large size. In general, the topography and size of fields are such as to permit the effective use of fairly large machines.

Table 3. - Number of tractors per 100 farms, specified State groups, designated Census years 1/

State group	Number of tractors per 100 farms in: 1920	1930	1940
	Number	Number	Number
North Atlantic 2/	2.8	19.9	32.1
Corn Belt 3/	6.0	23.4	42.0
Lake States 4/	5.5	24.8	44.2
Great Plains 5/	12.3	39.1	61.2
South Atlantic 6/	1.0	4.5	6.2
South Central 7/	.7	2.4	4.6
Oklahoma-Texas	2.4	9.1	24.1
Mountain 8/	7.2	19.9	32.3
Pacific 9/	8.4	23.9	32.7
United States	3.8	14.6	25.7

1/ Compiled from reports of the Bureau of the Census.
2/ Includes the New England States, New Jersey, New York, and Pennsylvania.
3/ Includes Ohio, Indiana, Illinois, Iowa and Missouri.
4/ Includes Michigan, Wisconsin and Minnesota.
5/ Includes North Dakota, South Dakota, Nebraska and Kansas.
6/ Includes Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia and Florida.
7/ Includes Kentucky, Tennessee, Alabama, Mississippi, Arkansas, and Louisiana.
8/ Includes Montana, Wyoming, Colorado, New Mexico, Arizona, Nevada, Utah and Idaho.
9/ Includes Oregon, Washington and California.

There were relatively few tractors in the South Central and South Atlantic States. In these Southern areas the farms are of relatively small size. The fields are often irregular in shape and are usually small. Cotton is the major crop and a machine for harvesting cotton effectively has not yet been developed. The harvesting operation in most areas utilizes 40 percent or more of the total cotton field labor.

GENERAL-PURPOSE TRACTOR MOST IMPORTANT

Before 1925, practically all of the tractors on farms were of the standard-wheel type, although there were some track-laying, garden, and general-purpose tractors. In 1925, about 92 percent of the tractors sold for domestic use in the United States were of the standard-wheel type. The standard-wheel tractor has since declined greatly in importance (table 4), and in 1940 it represented only 4 percent of the total sales. The general-purpose tractor was probably first developed around 1915, but its use made little headway until after 1925. In 1930, about 38 percent of the total sales were of the general-purpose type and in 1940 these tractors accounted for more than 85 percent of the sale of tractors for domestic use. Track-laying tractors have also increased in number of sales but most of these are bought by industrial users. Sales of garden tractors have shown but little relative change since 1925. The sales figures shown in table 4 are the total purchases by all domestic users. Relatively few of the standard-wheel and general-purpose tractors sold in this country are bought by non-farmers and thus wheel tractors constitute an even higher percentage of tractors bought by farmers than of the total domestic sales.

Table 4. - Tractors sold for domestic use in the United States distributed by type of tractor, designated years 1/

Year	Total tractors sold for domestic use	Sales distributed to:			
		Standard-wheel tractors	General-purpose tractors	Track-laying tractors	Garden tractors
	Thousands	Percent	Percent	Percent	Percent
1925	122	92.5	.9	3.8	2.8
1930	132	45.5	38.5	11.4	4.6
1935	138	18.4	68.3	10.2	3.1
1940	241	4.1	85.5	6.7	3.7

1/ Compiled from Work Projects Administration, National Research project report, "Tractors, Trucks and Automobiles" and from reports of the Census of Manufacture, Bureau of the Census, Department of Commerce. The sales figures include tractors sold to industrial users as well as to farmers. It has been estimated that about 5 percent of the standard-wheel and general-purpose tractors and about two-thirds of the track-laying tractors are bought by others than farmers. Probably a considerable number of the garden tractors are bought by non-farmers.

Owing to large purchases of general-purpose tractors by farmers in recent years it is estimated that about 56 percent of the tractors on farms on January 1, 1941, were of this type (table 5). Standard-wheel tractors were the second most important type, with track-laying tractors accounting for only 5 percent of the total, and home-made tractors about 2 percent. The reports from the crop correspondents show that less than one-half of 1 percent were garden tractors. However, domestic sales of garden tractors usually account for about 3 percent of the total. Definite information covering distribution of sales is not available but after allowing for a considerable volume to urban users it seems that there probably are more garden tractors on farms than is indicated in table 5. It is probable that the market gardeners and part-time farmers own a large proportion of the garden tractors and that relatively few farms of these types were included in the study.

Table 5. - Number and type of tractors on farms by State groups and the United States, Jan. 1, 1941

State groups 1/	Total tractors on farms Jan. 1, 1941 2/	Specified type as a percentage of all tractors 3/				
		Wheel tractors				
		General-purpose	Standard-wheel	Home-made	Garden	Track-laying
	(1,000)	Percent	Percent	Percent	Percent	Percent
North Atlantic	165	50	41	4	1	4
Corn Belt	492	70	28	1	4/ -	1
Lake States	268	55	41	3	4/ -	1
Great Plains	276	46	51	4/ -	4/ -	3
South Atlantic	67	49	43	4	1	3
South Central	68	65	33	1	4/ -	1
Oklahoma-Texas	153	68	31	4/ -	4/ -	1
Mountain	80	39	48	1	4/ -	12
Pacific	96	20	30	2	4/ -	48
United States	1,665	56	37	2	4/ -	5

1/ See footnotes, table 3.

2/ Tractor numbers estimated from reports of the Bureau of Census, 1940 and from reports of the Department of Commerce which show tractor sales during 1940.

3/ Based on information obtained from crop correspondents in Feb. 1941.

4/ Less than one-half of one percent.

General-purpose tractors were the principal type except in the Pacific, Mountain, and Great Plains States. They were especially important in the Corn Belt, Oklahoma and Texas, and the South Central States. Standard-wheel tractors continue to lead in the Great Plains and Mountain States. In the Pacific Coast States the track-laying tractor leads and this tractor is fairly important in the Mountain States, but is little used in other States. Some home-made tractors — which are usually made by farmers or local people from discarded parts of automobiles, motortrucks, or tractors — were found in most States. They were relatively most frequent in the New England, South Atlantic, and Lake States.

NEW TRACTORS ARE IMPORTANT

Tractor sales in recent years have been large and crop correspondents' reports show that more than half of the total tractors on farms January 1, 1941 were less than 5 years old (year of manufacture 1936-40, table 6). Owing to the few sales of tractors in 1931-35, there were relatively few tractors from 5 to 9 years of age. Purchases from 1926-30 were relatively high. Almost one-fourth of all the tractors on farms January 1, 1941 had been bought in the period 1926-30 and were from 10 to 14 years of age at the time of the survey.

More than 90 percent of the general-purpose tractors were less than 10 years old and 75 percent were less than 5 years old. Most of the track-laying tractors were less than 5 years old. On the other hand, farmers' purchases of standard-wheel tractors have been declining and 60 percent of the numbers of this type were 10 years old and over.

BULK OF TRACTORS OF SMALL SIZE

Most of the tractors on farms January 1, 1941, were rated at less than 18.5 drawbar horsepower. Tractors of less than 12 D.B.H.P. (which includes practically all of the "one-plow and many two-plow" tractors) alone constitutes about 37 percent of the total of all tractors in the United States (table 7). Most of the tractors with ratings of from 12.0 to 18.49 D.B.H.P. are usually classed as two-plow tractors. Tractors in this group make up almost one-third of the United States total. Tractors with ratings exceeding 18.5 D.B.H.P. constitute more than 30 percent of the total number.

In the Pacific Coast there were more tractors of the larger sizes than in any other regional group. Tractor size is also above average in the Mountain States and in the Great Plains.

Tractor sizes vary with the tractor type. Only about 20 percent of the track-laying tractors had ratings of less than 18.5 D.B.H.P. compared with about 80 percent for general-purpose tractors and 65 percent for standard-wheel tractors.

Significant differences in D.B.H.P. ratings of tractors also exist with regard to age of tractor. Although the more recent tractors are smaller than are the older machines, they have higher speed and higher compression

Table 6. - Geographic distribution of tractors on farms, January 1, 1941, by type and age

State group 2/	Tractors on farms Jan. 1, 1941	Age of tractors, Jan. 1, 1941 1/				
		Less than 5 years	5-9 years	10-14 years	15-19 years	20 years and older
	Thousands	Percent	Percent	Percent	Percent	Percent
			All tractors 3/			
North Atlantic	156	52	15	21	8	4
Corn Belt	488	59	18	18	4	1
Lake States	259	55	14	23	5	3
Great Plains	276	43	17	35	3	2
South Atlantic	64	58	13	17	9	3
South Central	68	62	14	16	6	2
Oklahoma-Texas	153	57	19	22	1	1
Mountain	79	50	16	29	3	2
Pacific	94	52	18	18	8	4
United States	1,637	53	17	24	4	2
			General-purpose tractors			
North Atlantic	83	79	14	7	-	-
Corn Belt	344	74	18	7	1	-
Lake States	147	84	11	5	-	-
Great Plains	127	66	18	15	1	-
South Atlantic	33	89	7	4	-	-
South Central	44	80	13	6	1	-
Oklahoma-Texas	104	69	18	13	-	-
Mountain	31	77	15	8	-	-
Pacific	19	84	12	4	-	-
United States	932	75	16	9	-	-
			Standard-wheel tractors			
North Atlantic	67	18	17	39	18	8
Corn Belt	139	22	18	45	11	4
Lake States	109	17	19	47	11	6
Great Plains	141	22	16	53	6	3
South Atlantic	29	22	18	33	20	7
South Central	23	27	17	34	15	7
Oklahoma-Texas	47	36	20	38	14	2
Mountain	38	22	17	52	6	3
Pacific	29	22	16	33	18	11
United States	622	22	18	45	10	5

Continued

Table 6. - Geographic distribution of tractors on farms, January 1, 1941, by type and age - Continued

State group 2/	Tractors on farms Jan. 1, 1941	Age of tractors, Jan. 1, 1941 1/ Less than 5 years	5-9 years	10-14 years	15-19 years	20 years and older
	Thousands	Percent	Percent	Percent	Percent	Percent
		Track-laying tractors				
North Atlantic	6	53	28	13	4	2
Corn Belt	5	47	19	31	-	3
Lake States	3	42	8	25	4	21
Great Plains	8	52	19	22	3	4
South Atlantic	2	70	25	5	-	-
South Central	1	67	-	33	-	-
Oklahoma-Texas	2	46	31	23	-	-
Mountain	10	64	17	13	3	3
Pacific	46	59	21	15	4	1
United States	83	58	20	16	4	2

1/ Tractors manufactured during the period 1936-40 were considered as less than 5 years of age; those manufactured from 1931-35, from 5 to 9 years of age; tractors manufactured from 1926-30, from 10 to 14 years; from 1921-25, from 15 to 19 years; and those manufactured in 1920 and earlier, 20 years old and older.

2/ See footnote 1, table 3.

3/ Includes general-purpose, standard-wheel, and track-laying tractors. These types contributed more than 98 percent of the total tractors on reporting farms.

Table 7. - Farm tractors of different types, distributed according to size, State groups, and the United States, January 1, 1941

State group 2/	Tractors on farms Jan. 1, 1941	Tractors with drawbar horsepower ratings of: 1/							
		Less than 12 DBHP	12.0-18.49 DBHP	18.5-24.9 DBHP	25.0-31.49 DBHP	31.5-37.9 DBHP	38.0-44.49 DBHP	45.5-50.9 DBHP	51.0 DBHP and over
	Thousands	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
				All tractors 3/					
North Atlantic	156	58	28	11	2	-	-	-	1
Corn Belt	488	37	39	21	3	-	-	-	-
Lake States	259	45	29	23	3	-	-	-	-
Great Plains	276	25	33	34	7	-	-	1	-
South Atlantic	64	57	28	13	2	-	-	-	-
South Central	68	42	32	22	4	-	-	-	-
Oklahoma-Texas	153	27	38	28	7	-	-	-	-
Mountain	79	28	31	29	10	-	1	-	1
Pacific	94	29	18	25	16	3	7	-	2
United States	1,637	37	32	24	6	-	1	-	-
				General-purpose tractors					
North Atlantic	83	41	44	13	2	-	-	-	-
Corn Belt	344	30	49	19	2	-	-	-	-
Lake States	147	37	40	21	2	-	-	-	-
Great Plains	127	31	42	23	4	-	-	-	-
South Atlantic	33	39	47	12	2	-	-	-	-
South Central	44	27	44	25	4	-	-	-	-
Oklahoma-Texas	104	31	48	18	3	-	-	-	-
Mountain	31	33	42	21	4	-	-	-	-
Pacific	19	40	40	18	2	-	-	-	-
United States	932	33	45	19	3	-	-	-	-
				Standard-wheel tractors					
North Atlantic	67	84	8	6	2	-	-	-	-
Corn Belt	139	55	14	27	4	-	-	-	-
Lake States	109	58	15	24	3	-	-	-	-
Great Plains	141	21	27	44	8	-	-	-	-
South Atlantic	29	80	6	11	3	-	-	-	-
South Central	23	68	10	17	5	-	-	-	-
Oklahoma-Texas	47	21	20	46	13	-	-	-	-
Mountain	38	29	24	36	11	-	-	-	-
Pacific	29	69	14	14	3	-	-	-	-
United States	622	46	18	30	6	-	-	-	-

Continued

Table 7. - Farm tractors of different types, distributed according to size, State groups, and the United States, January 1, 1941 - Continued

State group 2/	Tractors on farms Jan. 1, 1941	Tractors with drawbar horsepower ratings of: 1/							
		Less than 12 DBHP	12.0-18.49 DBHP	18.5-24.9 DBHP	25.0-31.49 DBHP	31.5-37.9 DBHP	38.0-44.49 DBHP	45.5-50.9 DBHP	51.0 DBHP and over
	Thousands	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
				Track-laying tractors					
North Atlantic	6	21	28	36	13	-	-	-	2
Corn Belt	5	28	16	31	19	-	3	3	-
Lake States	3	12	42	25	21	-	-	-	-
Great Plains	8	3	15	40	32	-	3	4	3
South Atlantic	2	20	15	60	5	-	-	-	-
South Central	1	-	-	67	-	33	-	-	-
Oklahoma-Texas	2	-	15	31	39	-	15	-	-
Mountain	10	5	20	27	30	4	8	2	6
Pacific	46	3	12	33	28	6	13	1	4
United States	83	5	16	33	27	4	10	1	4

1/ The above ratings are based on tests of the Nebraska Experiment Station and on manufacturers' ratings. They reflect the D.B.H.P. developed with rated loads.

Ratings of the older wheel tractors are based on steel tractors and ratings for the newer wheel types are based largely on rubber tires. The adoption of rubber tires increases substantially the D.B.H.P. developed by most types of wheel tractors. Many tractors rated on steel traction are now equipped with rubber tires and consequently now develop more D.B.H.P. than when purchased. For this reason the above rating should be considered only as approximate. It is believed, however, that changes in ratings for specified age groups would not be important even if ratings of all wheel tractors were based on their present wheel traction.

2/ See footnotes, table 3.

3/ Home-made and garden tractors not included.

motors, are usually equipped with rubber tires and have higher D.B.H.P. rating than do the older ones of the same weight. For all types now on farms, the D.B.H.P. rating tends to be less for the older than for the newer tractors (table 8). It seems probable that the service life of small tractors bought in the past years has been longer than for the larger size, and consequently the smaller types make up a larger percentage of the older tractors remaining on farms than they did of the original sales. Most of the tractors that were more than 10 years old on January 1, 1941 were standard-wheel types. About 90 percent of the standard-wheel tractors 15 years old and over had ratings of less than 18.5 D.B.H.P. Only about 42 percent of the tractors of the standard-wheel type under 5 years of age were in the corresponding size group.

LENGTH OF SERVICE OF FARM TRACTORS

The serviceable life of tractors during the last several decades has reflected to an appreciable extent the dynamic conditions that prevailed in the industry. In 1910, the farm-tractor industry was in its infancy. In 1941 the output was an important part of the whole farm-machinery production.

The first tractors generally tended to be large. Rate of travel was low and the drawbar horsepower developed in relation to tractor weight was much less than for modern tractors. Then, at first many tractors bought by farmers were poorly designed and constructed, according to later engineering standards. Practically all the early tractors were adapted chiefly to heavy-duty work. It was not until about 1928 that production of general-purpose tractors began to be important. Other developments, such as the power take-off and the adaptation of rubber tires, have affected the length of service of tractors. Thus it appears certain that farmers have discarded many tractors because of obsolescence. Many of the discards were mechanically fit for further service.

Reports of crop correspondents provided a basis for estimating the number of tractors on farms January 1, 1941, by specific year of manufacture. Comparison of the numbers of tractors now on farms with the numbers of tractors bought by farmers of specified year of manufacture provides a fairly reliable basis for estimating the average length of service which farmers have obtained from their tractors. The reports show that after 10 years about 85 tractors for each 100 purchased still remain on farms; beginning with about the 12th year and continuing to about the 16th year the rate of disappearance is at a high level. Rate of disappearance tends to slow up after 16 years, and some few tractors remain on farms after 20 years (fig. 1).

An analysis of the material from which figure 1 was prepared indicates an average length of service of about 12 years for farm tractors. This figure applies mainly to tractors sold during the last 20 years. Length of service especially during the early years of this period was affected somewhat by obsolescence. Tractor developments in recent years have been fairly important, but have not been sufficient to result in discarding of tractors because of obsolescence. This suggests length of life for modern tractors may be greater than for tractors bought before 1930.

NUMBER OF TRACTORS ON FARMS JAN. 1, 1941 PER 100 TRACTORS BOUGHT IN YEAR MANUFACTURED

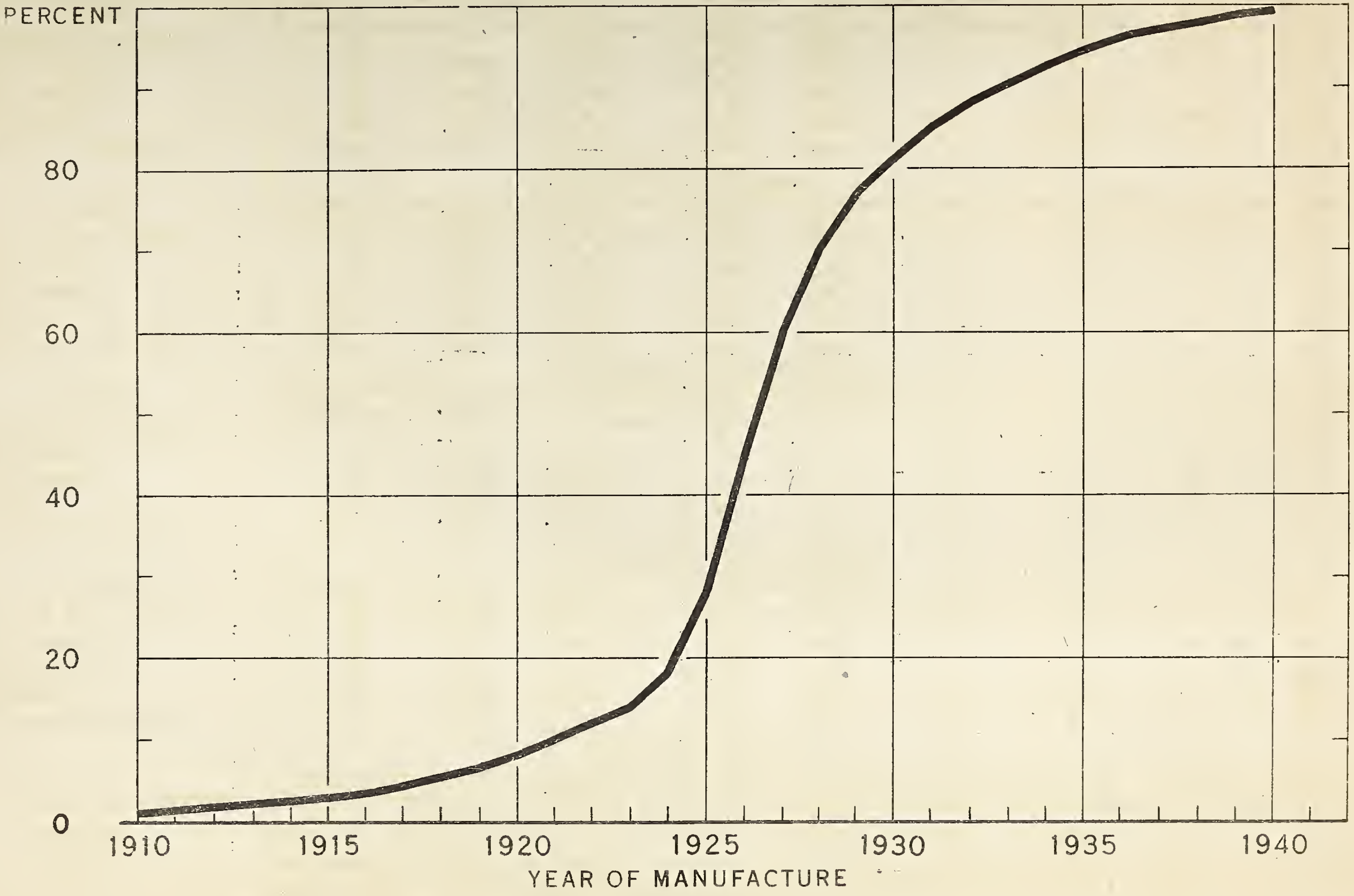

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Table 8. - Farm tractors of different types and ages distributed according to size in the United States, January 1, 1941

Age of tractor Jan. 1, 1941	Tractors on farms Jan. 1, 1941	Tractors with drawbar horsepower ratings of: 1/							
		Less than 12 D.B.H.P.	12.0-18.49 D.B.H.P.	18.5-24.9 D.B.H.P.	25.0-31.49 D.B.H.P.	31.5-37.9 D.B.H.P.	38.0-44.49 D.B.H.P.	45.5-50.9 D.B.H.P.	51 and over D.B.H.P.
	Thousands	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
				All tractors 2/					
Less than 5 years	866	27.0	38.7	25.7	7.2	.4	.8	-	.2
5-9 years	275	36.3	28.0	29.1	4.2	.6	1.2	-	.6
10-14 years	388	47.7	25.7	22.4	3.8	-	-	-	.4
15-19 years	74	73.3	15.6	8.9	2.2	-	-	-	-
20 years and older	34	71.4	19.0	4.8	4.8	-	-	-	-
Total	1,637	36.5	32.4	24.3	5.6	.3	.6	-	.3
				General-purpose tractors					
Less than 5 years	700	29.7	45.8	20.9	3.6	-	-	-	-
5-9 years	147	38.0	42.4	19.0	.6	-	-	-	-
10-14 years	80	48.8	44.2	7.0	-	-	-	-	-
15-19 years	5	60.0	40.0	-	-	-	-	-	-
20 years and older	-	-	-	-	-	-	-	-	-
Total	932	32.8	45.1	19.3	2.8	-	-	-	-
				Standard-wheel tractors					
Less than 5 years	138	24.8	18.5	42.8	13.9	-	-	-	-
5-9 years	108	40.5	12.7	40.4	6.4	-	-	-	-
10-14 years	282	49.4	21.2	26.5	2.9	-	-	-	-
15-19 years	63	76.4	13.8	7.8	2.0	-	-	-	-
20 years and older	31	74.0	16.0	6.0	4.0	-	-	-	-
Total	622	46.4	18.1	29.6	5.9	-	-	-	-
				Track-laying tractors					
Less than 5 years	48	1.7	11.4	38.2	29.2	5.5	11.2	.7	2.1
5-9 years	17	7.4	17.2	36.3	17.6	4.9	12.7	1.0	2.9
10-14 years	13	16.4	21.4	17.6	33.3	-	2.5	-	8.8
15-19 years	3	11.8	35.3	14.7	26.5	-	-	2.9	8.8
20 years and older	2	-	36.4	18.2	13.6	-	13.6	13.6	4.6
Total	83	5.5	15.5	33.3	27.1	4.2	9.8	1.0	3.6

1/ See footnote 1, table 7.

2/ Includes general-purpose, standard-wheel, and track-laying tractors; home-made and garden type tractors not included.

Another indication of the likelihood of longer life for modern tractors was the fact that most of the wheel tractors bought by farmers in recent years are of the relatively small sizes. Of the old tractors now on farms an unusually high proportion is of the smaller sizes (table 8). This suggests that the average life of small tractors is longer than for the large tractors. It is probable that the smaller size tractors were bought mostly by farmers with small acreages and the annual use was less than for the larger tractors on the larger farms. Also, it is probable that many of the larger tractors were bought especially for heavy-duty jobs, such as operating threshing separators, and the increased use of the combine and the introduction of separators of smaller size may well have contributed to the relatively short period of service which farmers realized from many of the large tractors.

About 60 percent of the wheel tractors on farms January 1, 1941, had rubber tires. In recent years practically all wheel tractors bought by farmers had rubber tires. Rubber reduces vibration and thus tends to prolong the life of machines. However, even if there were no restrictions in the use of rubber, rubber tires cost money and the average tire life is estimated at about 6 years. In some instances the cost of re-equipping old tractors with rubber tires or inability to obtain replacements because of rubber shortage may be an important factor affecting tractor life.

Also the modern tractors in general have higher speed and higher compression motors than did the older tractors. Also, with general-purpose tractors now the dominant type, tractors now perform many more farm jobs than was formerly the case. Consequently, tractors are now used considerably more hours in a year than was the case in 1930 and earlier years when the standard-wheel tractor was the dominant type.

Thus, although it is not clear that farmers will realize more years of service from modern tractors than they realized from tractors in the past, it seems certain that they will realize more total hours of use from the tractor of today than were realized from the tractor of the past.